

(hereinafter referred to as “the Doyle et al. ‘158 patent”) and U.S. Patent No. 5,338,198 to Wu et al. (hereinafter referred to as “the Wu et al. ‘198 patent”); rejected claims 45 – 47 under 35 U.S.C. §103(a) as being unpatentable over the Chishti et al. ‘511 patent in view of the Doyle et al. ‘158 and the Wu et al. ‘198 patent and further in view of U.S. Patent No. 6,334,853 to Kopelman (hereinafter referred to as “the Kopelman ‘853 patent”); and rejected claims 27 – 54 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 27 – 45 of co-pending Application No. 11/051,329 (hereinafter referred to as “the ‘329 application”).

By this Response, the prior art rejections been traversed and a terminal disclaimer has been filed to overcome the double patenting rejection. It is respectfully submitted that no new matter within the meaning of 35 U.S.C. §132 has been introduced to this application.

### **Rejections Under 35 U.S.C. §103(a)**

To establish a *prima facie* case of obviousness, the Examiner must establish that the prior art references teach or suggest all of the claim limitations. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

#### **1. The Chishti et al. ‘511 Patent In The Doyle et al. ‘158 Patent And The Wu et al. ‘198 Patent**

The Examiner rejected claims 27 – 44 and 48 – 54 as being unpatentable over the Chishti et al. ‘511 patent in view of the Doyle et al. ‘158 patent and the Wu et al. ‘198 patent.

### Response

Applicant submits that a prima facie case of obviousness has not been established since the present application predates the primary reference of the cited prior art combination and, without the primary reference, the cited prior art combination does not disclose, teach or suggest all of the features of the presently claimed invention. "When a U.S. patent is used to reject claims, the disclosure relied on in the rejection must be present in the issued patent. It is the earliest effective U.S. filing date of the U.S. patent being relied on as the critical reference date and subject matter not included in the patent or application publication itself can only be used when that subject matter becomes public. Subject matter which is disclosed in a parent application, but not included in the child continuation-in-part (CIP) cannot be relied on in a 35 U.S.C. 102(e) rejection over the issued or published CIP." *See MPEP §2136.02, citations omitted.*

While the Chishti et al. '511 patent has a priority date of June 20, 1997, the Chishti '511 patent is a continuation-in-part patent of an earlier patent, U.S. Patent No. 5,975,893 (having a filing date of October 8, 1997), which is in turn based on Provisional Application No. 60/050,342 filed June 20, 1997. On review of the specification of U.S. Patent No. 5,975,893, it would appear that there are no parts thereof that correspond to the specific sections of the Chishti '511 patent cited in the Office Action. Thus, Applicant submits that the disclosure used to render the presently claimed invention obvious is improperly attributed to a prior art disclosure and, therefore, improperly cited. Alternatively, Applicant respectfully requests that the Examiner identify those portions of U.S. Patent No. 5,975,893 patent that support the obviousness rejection under 35 U.S.C. §103(a).

The remaining cited prior art combination does not disclose, teach or suggest all of the features of the presently claimed invention. The method disclosed in the Doyle '198 patent is based on the following steps (see for example, on col. 3 lines 8-26 and a more detailed explanation in col. 6 line 18 to

col. 10 line 34): "displaying a center axis of each tooth in the set of teeth, wherein the center axis extends between a root portion and a crown portion of the tooth; determining differences between the position and orientation of the center axis of each tooth and torque, tip and angulation values for each tooth representing a desired position and orientation of the tooth for a selected set of orthodontic brackets; determining differences between the digitized three dimensional video image and a statistically average tooth for each tooth; determining an optimum position of each bracket on an associated tooth for moving the tooth to the desired position and orientation; determining a size and shape of a positioning jig for each bracket and tooth combination for optimum positioning of each bracket on a respective tooth for moving the tooth to the desired position and orientation; attaching each jig to an associated bracket and installing each jig and bracket combination on a respective tooth in said optimum position; removing each jig from its associated bracket; and attaching an archwire to the brackets."

As can be seen, the Doyle method involves the determination, for each tooth, of a "bracket sighting point" or BSP, which is a virtual and theoretical point that represent the center axis of the tooth (see step 17 in Fig. 3a, col. 6 lines 21-41). The Doyle method further involves the presentation of an archwire and the positioning of the archwire in a plane that is defined theoretically by leveling the BSP for each tooth so that each of the BSP's in a jaw are common to a plane (see col. 6 lines 54-59). The Doyle method further involves, for each tooth, the positioning of the bracket onto the archwire. In order to overcome the differences between the theoretical, calculated positioning of the brackets (i.e. the BSPs) and the resultant positioning of the brackets on the archwire, a "fine-tuning" is carried out which involves calculations based on the following data: statistical information (e.g. the data relating to a "statistically average" tooth) (see Fig. 12 and text in col. 7 lines 42-50); the measured data (i.e. the data corresponding to the specific patient's tooth); information relating to the specific bracket in use (e.g. torque information).

The Wu et al. '198 patent discloses a dental modeling simulator that operates by measuring

molded impressions of teeth on a support table, the support table defining an X-Y plane. A laser probe detects Z-axis measurements in a first position; the molded impression is then tilted and the measuring process is repeated to obtain theretofore hidden measurements. A virtual three-dimensional model is thus produced.

**a. Claim 27**

Among other things, independent claim 27 recites a method for selecting orthodontic components comprising “generating a prescription for orthodontic treatment including specifying the type of components used based on the components of the virtual treatment.”

In contrast to the presently claimed invention, the validly cited prior art combination is completely silent as to a step of “generating a prescription for orthodontic treatment including specifying the type of components used based on the components of the virtual treatment” as recited in independent claim 27. Rather, the cited prior art combination is directed toward modeling of a patient’s teeth rather than diagnosis of problems and *prescriptions* of solutions for those problems. Thus, the cited prior art combination does not disclose, teach or suggest all of the features recited in independent claim 27 of the present application.

**b. Claim 50**

Similarly, the cited prior art combination does not disclose, teach or suggest all of the features recited in independent claim 50.

Among other things, independent claim 50 recites a method for selecting real-life orthodontic components for use in an orthodontic treatment of an individual comprising “selecting a virtual set of orthodontic components representing real-life orthodontic components that may be used in an orthodontic

treatment, said virtual set of components simulating the components of said real-life set....”

In contrast to the presently claimed invention, the validly cited prior art combination does not disclose, teach or suggest a step of “selecting a virtual set of orthodontic components representing real-life orthodontic components that may be used in an orthodontic treatment, said virtual set of components simulating the components of said real-life set...,” as recited in independent claim 50. Again, the cited prior art combination is directed toward modeling of a patient’s teeth rather than diagnosis of problems and prescriptions of solutions for those problems. Thus, by itself, the Wu et al. ‘198 patent does not disclose, teach or suggest all of the features recited in independent claim 50 of the present application.

Accordingly, Applicants respectfully request that the Examiner allow independent claims 27 and 50 and allow all claims dependent thereon by reconsidering and withdrawing the rejection of these claims as being obvious over the cited prior art.

**2. The Chishti et al. ‘511 patent in view of The Doyle et al. ‘158 Patent and the Wu et al ‘198 Patent and Further in View of The Kopelman ‘853 Patent**

The Examiner rejected claims 45 – 47 as being unpatentable over the Chishti et al. ‘511 patent in view of the Doyle et al. ‘158 and the Wu et al. ‘198 patent and further in view of the Kopelman ‘853 patent.

**Response**

The arguments above with respect to the Chishti et al. ‘511 patent, the Doyle et al. ‘158 patent and the Wu et al. ‘198 patent are incorporated herein by reference.

Applicant respectfully traverses the rejection since no prima facie case of obviousness has been established as the present application predates the cited primary reference of the cited prior

combination as well as the Kopelman '853 patent; and without the primary reference, the cited prior art combination does not disclose, teach or suggest all of the features of the presently claimed invention.

Applicant submits that the Kopelman et al. '853 patent has a filing date of May 14, 1998 and is not entitled to the Israeli priority date of May 22, 1997 for the purposes of application to the present claims. To determine whether the filing date of an international patent document is the earliest effective filing date of a reference, it must be shown that the international application was: 1) filed on or after November 29, 2000, 2) designated the United States and 3) was published in English under PCT Article 21(2). Alternatively, the effective filing date is the reference's date of completion of the 35 U.S.C. 371(c)(1), (2) and (4) requirements, or any earlier filing date to which such an international application claims benefit or priority. Thus, since the PCT application that matured into the Kopelman et al. '853 patent was filed before November 29, 2000, the Kopelman et al. '853 patent is entitled to an effective filing date of June 12, 2000, which is after the priority date of the instant application.

Thus, in view of the inapplicability of the Chishti et al. '511 patent and the Kopelman et al. '853 patent and further in view of the arguments provided above with respect to the deficiencies of the cited prior art combination, Applicants respectfully submit that the presently claimed invention is not rendered obvious. Accordingly, Applicants respectfully requests that the Examiner reconsider and withdraw the rejection.

### **Double Patenting**

The Examiner rejected claims 27 – 54 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 27 – 45 of the '329 application.

### Response

Along with this paper, Applicants have submitted a terminal disclaimer, which obviates the double patenting rejection. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejections.

### CONCLUSION

In light of the foregoing, Applicants submit that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time.

Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,

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